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MANNING

1971

A REGION 3 REPORT

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MAY 3 1972
ROCKY MOUNTAIN STATION

U. S. DEPARTMENT OF AGRICULTURE • FOREST SERVICE • SOUTHWESTERN REGION

DEDICATION

"MANNING 1971 - A REGION 3 REPORT," IS DEDICATED TO DISTRICT RANGER ROLLO P. JULANDER, WHO GAVE HIS LIFE IN THE PERFORMANCE OF HIS DUTY, JULY 17, 1971. "JULIE" WAS SERVING AS AN AIR ATTACK BOSS ON THE SECRET MOUNTAIN FIRES.

THE STORY.....

Region 3, Southwestern Region, USDA Forest Service, anticipated the 1971 Fire Season to be a difficult one! The Region prepared early in 1971 to meet the challenge.

During the previous fire season, the Southwestern Region took suppression action on 2,700 fires.

There were but a few weeks respite between the end of the 1970 fire season and the beginning of the 1971 season. Most National Forests in the Southwestern Region suffered a seriously dry winter - *no snow pack*. The first project fire started January 30, on the Lincoln National Forest at an elevation of 8,800 feet.

Fire Managers initiated ground work for an intensified prevention and initial attack program early!

Prevention:

- *Fire and smoking restrictions, closures and intensified inspections were initiated.*
- *Fire prevention specialists were brought in from another Region to "beef up" our own prevention units.*

Presuppression:

- *Contract air tankers and helicopters were placed on base prior to contract dates.*
- *Santa Fe satellite air tanker base was activated.*

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- *Four air tankers, 3 lead planes, and 3 helicopters were added to the regular initial attack air organization.*

- *The normal complement of 12 smokejumpers was increased to 28.*

- *Twenty-five large models 50, 56, and 60 ground tankers were brought in from another Region.*

- *Eleven organized crews were activated and placed throughout the Region to supplement the one interregional crew.*

- *STOL, short takeoff and landing, aircraft (Twin Otter and Caribou) and one DC-6 were placed on duty.*

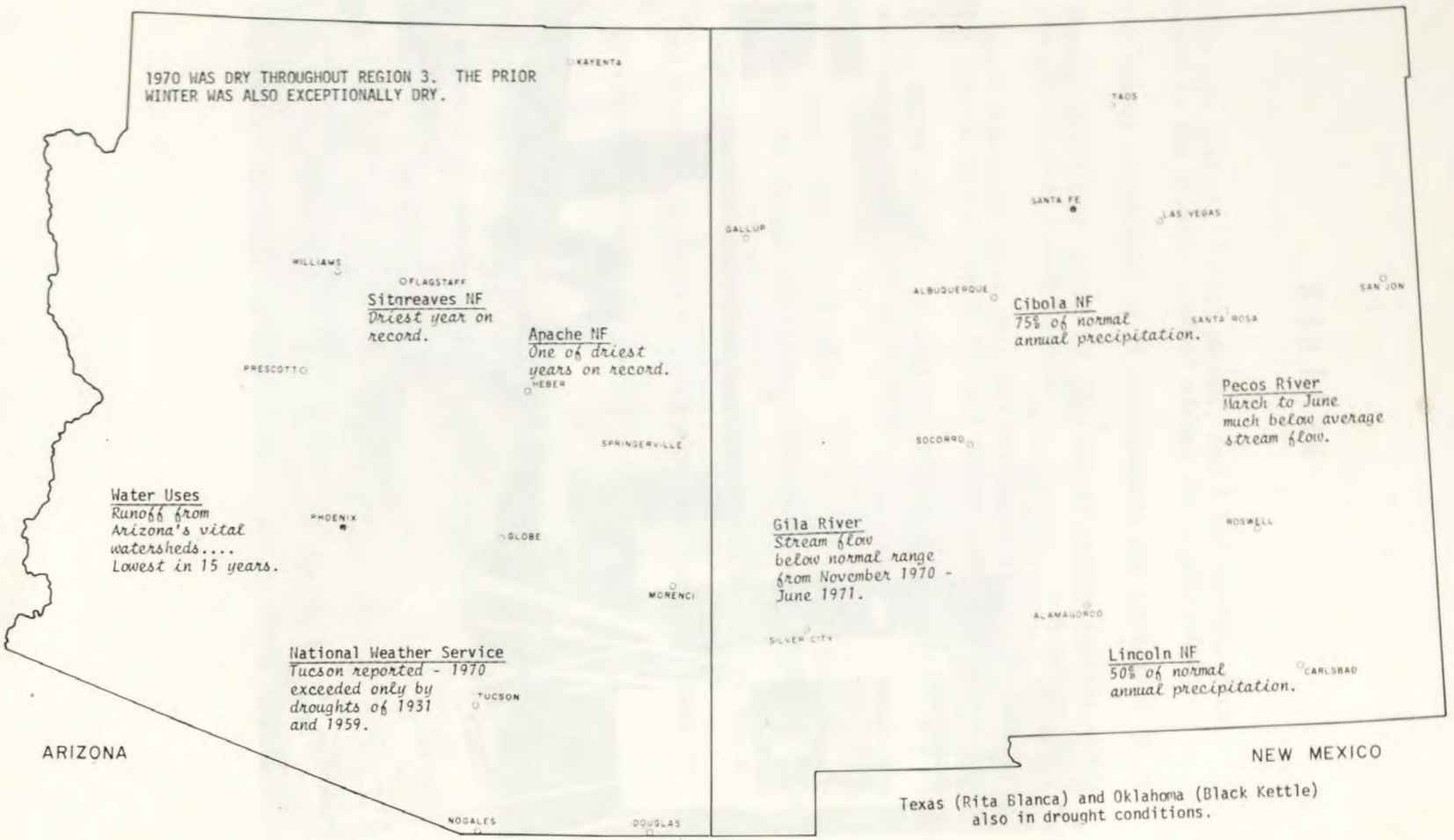
We were ready - we met the challenge. Our basic philosophy of strong initial attack proved itself in each fire situation. It is now a proven fact that the successful manning program saved millions of dollars in suppression cost and resource damage loss.

The following provides a "*size-up*" of the 1971 season...burning conditions, manning, and success achieved...reduction in fire losses (damages plus costs).

WEATHER

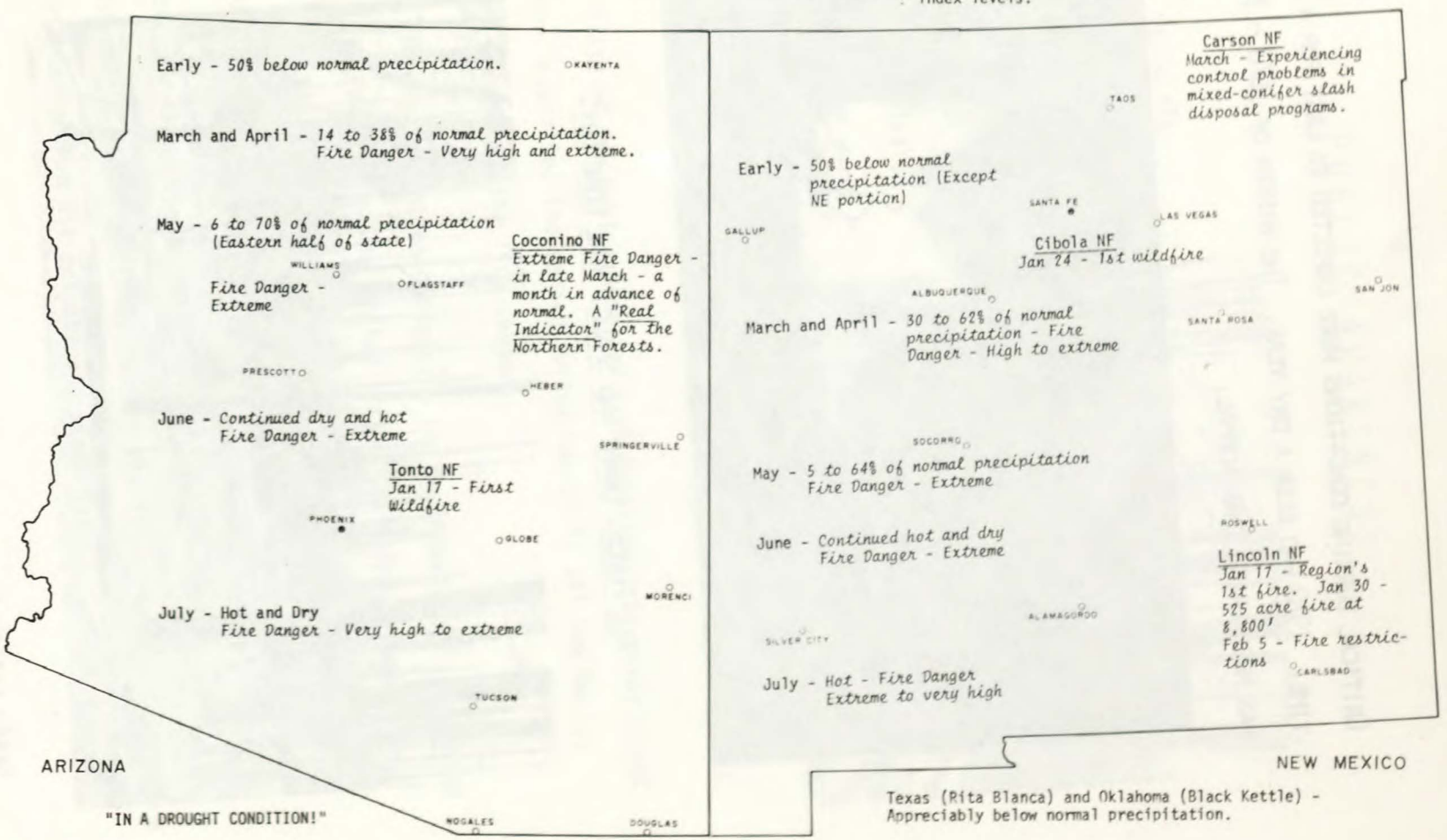
FIRE WEATHER MOBILE STATION
U.S. DEPT. OF COMMERCE
WEATHER BUREAU 18-62

1970 WEATHER SEVERITY



1971 WEATHER SEVERITY

Early in 1971 Region 3 Forests began to reach EXTREME burning index levels.


Early - 50% below normal precipitation.
KAYENTA
March and April - 14 to 38% of normal precipitation.
Fire Danger - Very high and extreme.
May - 6 to 70% of normal precipitation
(Eastern half of state)
Fire Danger - Extreme
WILLIAMS
FLAGSTAFF
Coconino NF
Extreme Fire Danger - in late March - a month in advance of normal. A "Real Indicator" for the Northern Forests.
PRESCOTT
HEBER
June - Continued dry and hot
Fire Danger - Extreme
SPRINGERVILLE
Tonto NF
Jan 17 - First Wildfire
PHOENIX
GLOBE
MORENCI
July - Hot and Dry
Fire Danger - Very high to extreme
TUCSON
ARIZONA
"IN A DROUGHT CONDITION!"
NOGALES
DOUGLAS
Carson NF
March - Experiencing control problems in mixed-conifer slash disposal programs.
TAOS
Early - 50% below normal precipitation (Except NE portion)
SANTA FE
LAS VEGAS
GALLUP
Cibola NF
Jan 24 - 1st wildfire
ALBUQUERQUE
SAN JON
March and April - 30 to 62% of normal precipitation - Fire Danger - High to extreme
SANTA ROSA
SOCORRO
May - 5 to 64% of normal precipitation
Fire Danger - Extreme
June - Continued hot and dry
Fire Danger - Extreme
ROSWELL
Lincoln NF
Jan 17 - Region's 1st fire. Jan 30 - 525 acre fire at 8,800'
Feb 5 - Fire restrictions
ALAMAGORDO
SILVER CITY
CARLSBAD
July - Hot - Fire Danger
Extreme to very high
NEW MEXICO
Texas (Rita Blanca) and Oklahoma (Black Kettle) - Appreciably below normal precipitation.

CRITICAL BURNING CONDITIONS WERE EXPECTED TO LAST FOR A LONG TIME. 1970 HAD BEEN A DRY YEAR. THE WINTER OF 1970 - 1971 WAS MUCH DRIER THAN NORMAL.

ALL FUELS, LARGE AND SMALL, WERE BONE DRY!

Early season fires resulted in nearly total consumption of dead material and the crowns of standing trees.

PUBLIC AWARENESS

Public Officials throughout the Southwest and the Nation recognized the drought condition...

The New Mexico Forestry Commission - "We are in the worst fire danger that I have experienced in 35 years in the business," said Ray Bell, State Forester (1971).

The State of New Mexico Game and Fish Department Director, Ladd Gordon, cancelled the spring turkey season in all New Mexico areas because of the fire danger.

The extreme drought conditions in the Southwest were recognized by the President of the United States who made statements on Federal Assistance to Drought Stricken Areas (Southwest) on May 19, 1971.

Governor Bruce King of New Mexico, issued a closing order for the entire state, April 2, thereby placing smoking and open fire restrictions on all private and state lands.

The public in the Region was alarmed. Such statements as:

> *"We wish to express our appreciation to you for closing the National Forest, to protect them..."*

and

> *"I want to congratulate you on the effectiveness in bringing awareness to travelers of the serious condition of the forest."*

were received by Forest Officers throughout the Southwestern Region from concerned citizens.

MANNING

PREVENTION-PRESUPPRESSION

SUPPRESSION

...THE SMOKECHASER

THE CREW....

...THE AIRTANKER

THE EQUIPMENT....

PRESUPPRESSION

Presuppression activities began early in 1971. On some Forests, there was no break between the 1970 and 1971 seasons. Based on Manning and Action Plans, as related to the evident fire danger ratings, manpower and equipment were systematically activated.

By early March, regularly financed positions were in place. On many Forests, all emergency positions were filled and specialized equipment was in place.

It became evident early in the year that the Southwestern Region's resources were not adequate to cope with the developing situation. The 1971 season was fast becoming one which would tax our PLAN to the limit.

In 1969, Region 3 completed an "Interim Fire Plan" for each National Forest (in advance of the 1972 national planning effort). This plan is designed to provide the best level of protection commensurate with probable loss. Much of the plan was placed into practice in the Southwest during the 1970 season. The results: "Great success with efficient accomplishment."

During May, the Region activated four additional large (B-17 Type) air tankers to supplement the initial attack forces. The Santa Fe Satellite base was placed into operation. Three additional lead-planes were on base.

Additional SWFFF crews were placed in high priority locations throughout the Region. The 12 regular smokejumpers were supplemented with an additional 16.

Anticipating Forest needs, the Region made even more additional initial attack resources available...Smokejumpers, air tankers, crews, overhead, ground equipment, and personnel aircraft.

"Caribou"... An aircraft new to Forest Service Fire Control activities. Twin Otter in background - Both aircraft short takeoff and landing, STOL.

Smokejumpers boarding the "Caribou."

APRIL 1971

Region 3 presuppression manning not only included regular and emergency forces, but...

25 Class I and II tankers with crews and 12 fire prevention technicians from Region 5 to help combat a mounting man-caused fire problem.

"All" our air tanker and helicopter contracts were activated.

KAYENTA
HEBER
SPRINGERVILLE
PHOENIX
GLOBE
MORENCI
TUCSON
NOGALES
DOUGLAS
ARIZONA

The IR crew stationed on the Gila National Forest and many SWFFF (Southwest Forest Fire Fighting) crews were in place throughout the Region.

....History indicated that we still had four more months to go before we could expect any relief in the form of summer rains....

NEW MEXICO

SUPPRESSION

Early fires, primarily man-caused, throughout the Region were extremely difficult to control. Comments from the field indicated this problem and the extreme burning conditions.

"If that first air tanker hadn't hit, we would have had a project fire..."

"There is no such thing as a two-man smokechaser fire anymore - we have to dispatch a crew."

"That Region 5 tanker saved us yesterday - without it a whole bunch of us would have been on top of that mountain with 2,000 acres on fire."

THE SEASON INTENSIFIED

June 15 was the beginning of the "lightning season" in Region 3. Fire danger was extreme throughout the Southwest.

The Region reported:

61 new fires - June 16

62 new fires - June 17

Forests reported, *"We're holding our own so long as the slurry and initial attack forces hold out!"*

"Air tankers, helicopters and smokejumpers very effective in holding fires to Class A-B-C this far."

37 new fires - June 18

Each day found the Region with 30-70 new fires. On June 23, the Gila National Forest alone reported over 100 uncontrolled fires plotted on their dispatch map.

During the 10 day period of June 17 to June 26, the Region handled control action on 510 fires. 502 of these fires were held to A-B-C classes. The extreme burning conditions and erratic weather moved a great number of them into Class C category. All fires starting on National Forest or National Forest-protected lands were held to 400 acres or less.

PROGRAM EFFECTIVENESS

Many questions have been raised: Was the Region 3 manning effort effective? Did the "stepped-up" manning of personnel, crews and air tankers pay off? Did the 25 large Region 5 ground tankers pay their way?

Informal teletypes and other messages received from Region 3 Forests tell this story.

The 150 acre Meadow Fire on the Coronado National Forest - "Region 5 Class II pumpers saved several homes - helped bring a potentially bad fire under control in short order..." 4-25-71

"Region 5 Class I and II ground tankers were extremely helpful in saving many summer homes in the Tragedy Fire" - Apache National Forest 5-6-71

"Summer home burned down near Greens Peak on the Apache National Forest. Dropped slurry and caught it at 1-2 acres yesterday." 6-1-71

Mr. and Mrs. Arnold Bereit of Scottsdale wrote to the Apache Forest Supervisor, Hallie Cox, following the Tragedy Fire in May:

At a time like this, "thank you" seems to be very inadequate to express our gratitude and appreciation for the service you and your men rendered during the recent fire in the Apache Forest and in particular in the cabin site area of Greer.

We have spent the past two weekends working around our cabin repairing and cleaning up some of the mess and damage caused by the fire and each time we looked around, we were grateful we had a cabin to be working on.

We have enjoyed a great deal of time during the last 15 years at our cabin, in this most beautiful forest land, raising our children here and sharing the beauty of the land with friends and neighbors.

We are planning on spending most of the summer at our cabin and if there is any way we can help in the clean-up we and our sons and their friends would all be happy to do anything that might prove helpful.

COCONINO
CORRECTION TO SIT REPORT FOR 5-21-71. ADD ONE CLASS B MAN-CAUSED THIS FIRE WAS CONTPOLLED AT FIVE ACRES, IN SPITE OF TEN TO FIFTEEN MILE AN HOUR WINDS, WITH FOUR FOREST AND THREE R5 TANKERS PLUS THIRTY SWFFF CREW MEMBERS FROM OUR STEPPED-UP MANNING.
COCONINO 0700 MST 5-22-71 WITT

FSRO
GILA
THANKS TO THE AVAILABILITY OF THE STEPPED UP MANNING CREW STATIONED AT CAMP THUNDER BIRD (EL RITO #1) WITH AGGRESSIVE ATTACK ON HOT SPOTS FIRES FROM THE SMOKEJUMPERS(GROUND) GROUND TANKERS HELITACK CREWS AND AERIAL TANKERS WE WERE ABLE TO CONTAIN THE BAYARD FIRE UNDER EXTREME BURNING CONDITIONS.
THE FIRE, BURNING IN BRUSH AND A HEAVY STAND OF GRASS, PUSHED BY WINDS GUSTING TO 30 MPH CONSUMMED APPROXIMATELY 60 ACRES.
THE FORT BAYARD HOSPITAL, (STATE OPERATED) A COMMERCIAL BUSINESS, A RANCH HOME, AND THE FORT BAYARD WILDLIFE HABITAT RESEARCH AREA WERE THREATENED. THE RESEARCH AREA IS VALUED AT ONE QUARTER MILLION DOLLARS. WE DO NOT HAVE AN ESTIMATE VALUE ON THE HOSPITAL, COMMERCIAL BUSINESS OR RANCH HOME
SIGNED FOSTER
SALARS 1916 MDT 5-23-71

The Phone Fire, man-caused, started on 5-25-71 on the Apache National Forest.

"Additional air tankers, Otters, stepped-up manning crews, Region 5 ground tankers were very helpful in stopping the Phone Fire. Six large hand crews moved into the fire within 3 hours."

"Retardant was the key to control at approximately 15 acres on a fire that crowned out and spotted for one quarter of a mile. Region 5 tanker and stepped-up manning also contributed greatly."
Coconino National Forest 5-26-71

One Sitgreaves District Ranger reported "The large Class I & II Region 5 tankers made it possible for us to burn-out the Rim Road for the ultimate control lines on the Bull Flat and Carrizo fires. Without their large capacity and well-trained crews we could not have stopped these fires at this location. They would have burned into the towns of Heber and Overgaard.

"On the Cebollita Fire, ground tankers and a 9,000 foot hose lay saved considerable burned acreage within the Jemez Canyon travel influence zone."

The Region Three Manning Program for 1971 was successful. The Southwestern Region had only two major fires of over 500 acres, out of 1,910 fires that started on National Forest lands or National Forest protection areas during the extreme summer period (June, July).

Cebollita, June 5, 5,000 acres, Santa Fe National Forest

Cat, June 27, 12,900 acres, Santa Fe National Forest

During the windy, extreme fire danger spring season, only two major fires started on National Forest land.

Kelly, April 11, 3,500 acres, Coconino National Forest

Tragedy, May 4, 4,200 acres, Apache National Forest

Spring Fire Danger

Fire Danger Ratings for much of the Region reached extreme early in March.

During this period, many of the danger stations recorded their highest ratings of the season. This resulted from high winds and unseasonably low relative humidities.

The years of 1951 and 1956 were very critical wildfire years. In 1951, many temperature records were broken in New Mexico. It was abnormally hot and dry. Reports show 1956 as the "worst ever experienced in the Southwestern Region." Twenty-five fires larger than 300 acres occurred between January 1 and June 30, 1956.

January 1 to July 31

Record Critical Years	1951	1956	1971
Number of Man-caused	199	235	493
Number of Lightning	1,064	1,530	1,826
Total Fires	1,263	1,765	2,319
Area Burned (N.F.)	94,011	77,679	36,266

Fire Control Officers agree that the 1971 season was much longer than 1951 or 1956. We entered 1971 with the heavy fuels in a much drier condition.

The 2,319 fires in 1971 exceeded 1951 by 46% and 1956 by 24%. Acreage burned for 1971 is 61% lower than the critical year 1951 and 53% lower than 1956. The stepped-up manning program was not available in 1951 and 1956.

The Southwestern Region's 1971 program effectiveness resulted primarily from *strong initial attack*.

What is it...What is involved...What are the problems?

Strong initial attack is dependent on:

Analyzing the fire control job to be done,
Planning for this job,
Implementing the plan,
Current evaluation of the plan (the basic data), and
Making necessary adjustments to the plan to meet current and future resource and management needs.

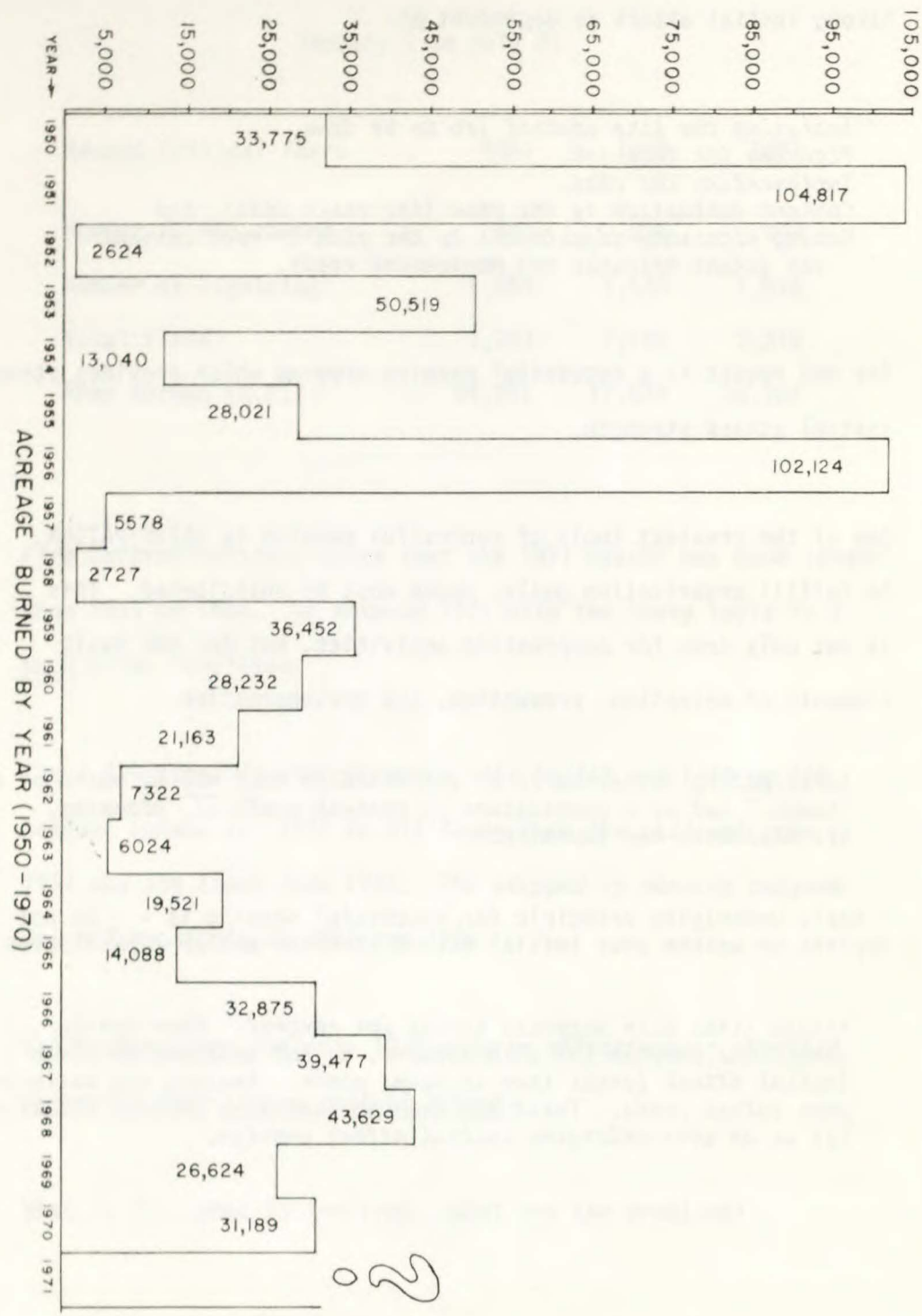
The end result is a successful manning program which provides strong initial attack strength.

One of the greatest tools of successful manning is ANTICIPATION. To fulfill organization goals, needs must be anticipated. This is not only true for suppression activities, but for the basic elements of detection, prevention, and presuppression.

Anticipating the needs of an organization must NOT be based on a "hunch," but on a combination of careful analysis, planning, reevaluation, and experience.

A basic underlying principle for successful manning is - - Do not deplete or weaken your initial attack strength and/or capabilities.

Attack fires with adequate forces for control. When burning conditions provide for fire escapes, do not continue to strip initial attack forces from adjacent areas. Analyze and anticipate your future needs. Treat the escaped fire as a project situation - not as an ever-enlarging initial attack problem.


ACRES
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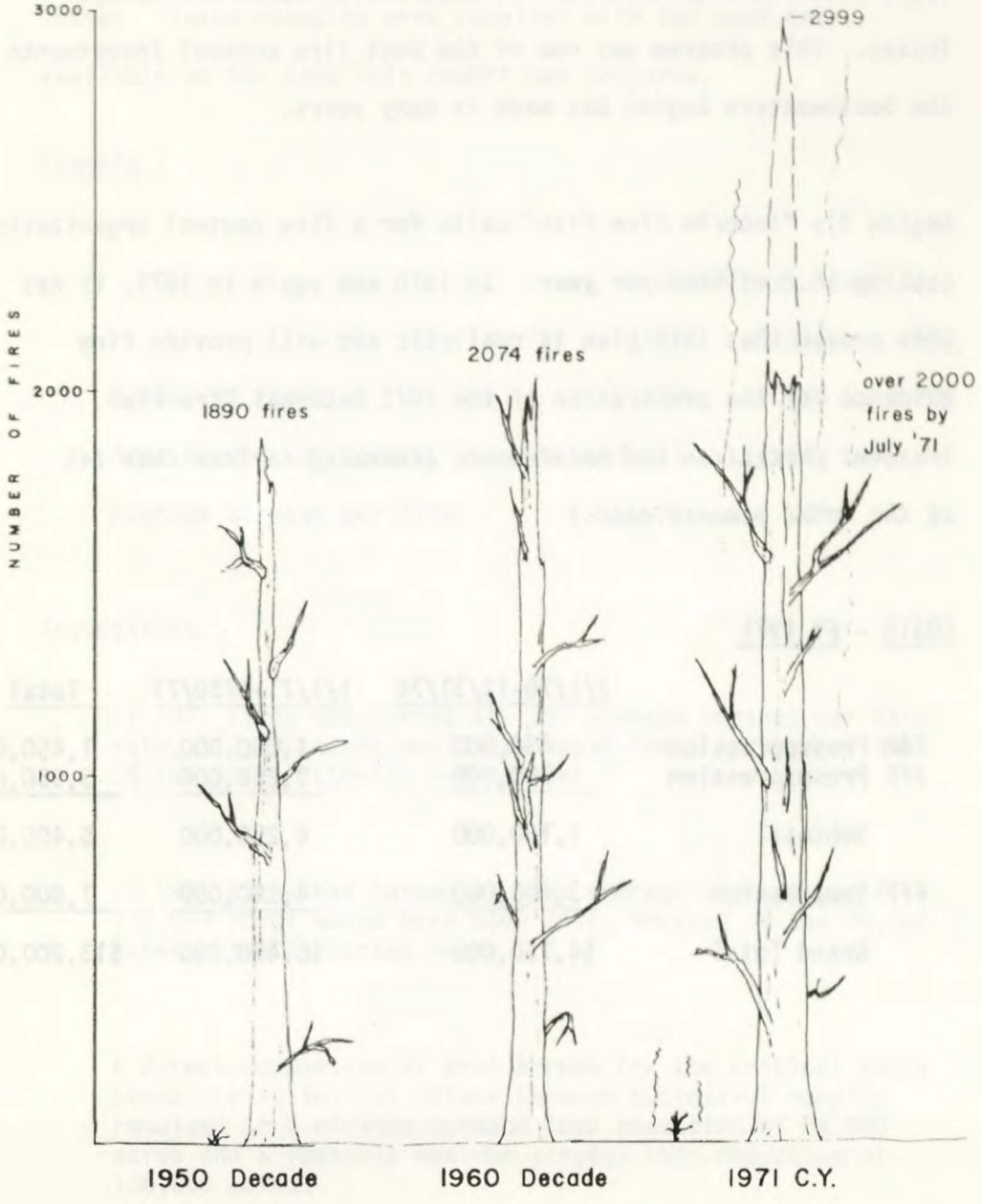
104,817
2624
50,519
13,040
28,021
102,124
5578
2727
36,452
28,232
21,163
7322
6024
19,521
14,088
32,875
39,477
43,629
26,624
31,189
ACREAGE BURNED BY YEAR (1950-1970)

COMPARISON OF 1971 FIRE OCCURRENCE TO 1950 DECADE AND 1960 DECADE AVERAGES



COST EFFECTIVENESS

Stepped-up manning costs money. Economically, wildfire suppression costs should not exceed probable resource damage. Region 3's 1971 manning program accomplished this requirement very effectively. Significant savings were made in suppression costs and damage losses. This program was one of the best fire control investments the Southwestern Region has made in many years.

Region 3's "Interim Fire Plan" calls for a fire control organization costing $6.2 million per year. In 1970 and again in 1971, it has been proven that this plan is realistic and will provide firm guidance for the preparation of the 1972 National Fire Plan. *(Present protection and maintenance financing is less than 24% of the total planned need.)*

COSTS - FY 1971

	7/1/70-12/31/70	1/1/71-6/30/71	Total
P&M Presuppression	450,000	1,000,000	1,450,000
FFF Presuppression	700,000	3,250,000	3,950,000
Subtotal	1,150,000	4,250,000	5,400,000
FFF Suppression	3,600,000	4,200,000	7,800,000
Grand Total	$4,750,000	$8,450,000	$13,200,000

SAVINGS

Savings or cost effectiveness of Region 3's manning program has been determined through a series of examples. All examples illustrate major savings in suppression costs and resource losses. These examples were compiled with the best data available at the time this report was prepared.

Example 1

	January 1 - July 31		
	1951	1956	1971
Number of Fires	1,263	1,765	2,319
Area Burned (NF acres)	94,011	77,679	36,266
Average acreage per fire	74	44	16

Assumptions

If 1971 fires had burned at 1951 average acreage per fire rate, 172,000 acres would have been lost, instead of the 36,266 acres actually burned over.

If 1971 fires had burned at 1956 average acreage per fire, 102,000 acres would have been lost, instead of the 36,266 acres actually burned over.

A direct comparison of area burned for the critical years shows strong initial attack through successful manning resulted in a minimum acreage loss reduction of 66,000 acres and a possible maximum acreage loss reduction of 136,000 acres.

Using today's large fire suppression costs ($90/acre) a savings of $5.9 million and a probable $12.2 million savings has been made. Increased presuppression costs, which provided this savings, is an estimated $2.0 million.

	Minimum Reduction (66,000 acres)	Maximum Reduction (136,000 acres)
Suppression Costs	5,900,000	12,200,000
Increased Costs	-2,000,000	- 2,000,000
Total Savings (Benefits)	$3,900,000	$10,200,000

The minimum benefit/cost ratio: $3:9 \div 2.0 \simeq 2:1$

The maximum possible benefit ratio: $10.2 \div 2.0 \simeq 5:1$

In addition to the savings in suppression costs, there was $66,000,000 and possibly $136,000,000 saved in potential resource damage 1/.

RESULT - *Savings of $3,900,000 to $10,200,000 were made in wildfire suppression costs. The potential resource loss incurred would have appreciably increased the total possible dollar loss and raised the benefit/cost ratio.*

1/ From the 1972 National Planning - Class 5 (average dollar loss and damage for second growth timber. The most recent resource loss data available.)

Example 2

The Gila National Forest had 120 lightning fires on June 23, 24 and 25. The total acreage burned was only 135 acres, an approximate average of 1 acre per fire.

During this same period, adjacent land management agencies with fewer fires had 4 large fires that burned a total of 13,300 acres, an average of 3,325 acres per fire. In near-by Arizona, another agency had multi-starts, similar to the Gila, resulting in over 80,000 acres burned.

Strong initial attack and adequate manning enabled the Gila National Forest to control their fires at small sizes. (None over Class C). The other agencies did not have this capability. The result was many large damaging and costly fires. Historical data indicates that 4% of the 120 Gila fires could have become larger than Class C if increased strength of attack had not been available. (120 x .04 = 4.8 fires)

Assumption

If 5 of these fires had escaped and reached the average of 3,300 acres each, the increase in burned area is estimated at 16,500 acres.

A study of D-G reports shows that each of the D or larger fires that occurred during the 6/21/71 - 7/2/71 period cost an average of $138,000. Manning program costs to control all 120 fires was $150,000.

5 fires at $138,000	=	$690,000
Program costs to prevent	=	-150,000
Net savings		$540,000

This is a benefit/cost ratio of 540 ÷ 150 = 3.6:1. Based on the 1972 Fire Planning data an estimated $16.5 million of resource losses was also saved.

RESULT - *The suppression cost dollar savings, on the Gila National Forest alone, paid for 25% of the Region's increased manning program costs of $2,000,000.*

Example 3

During the period 6/21 - 7/2/71, the Region controlled 513 fires.

506 fires - Reached size Class A, B, or C (less than 100 acres). The Daily Fire Report shows a total control cost of $1.6 million to suppress or an average of $3,200 per fire.

4 fires - Reached size Class D or larger (100 acres plus). The D-G report shows a total control cost of $1.2 million or an average suppression cost of $302,000 per fire. Average size was 3,500 acres.

3 fires - Region 3 handled suppression action on three other agency fires that burned 80,000 acres.

All reports indicate Class A fires (249) would have been controlled at that size class during the June 21 - July 2 period without the buildup in manpower and equipment.

Assumptions

Fire Control experts have calculated that 12% of the 257 B and C fires would have become Class D or larger fires without stepped-up manning during this extreme burning period. (12% x 257 = 31 fires)

Additional presuppression costs to prepare for the critical period, and suppression cost to prevent fires from becoming large is estimated at $3.5 million.

31 fires at $302,000	=	$9,362,000
Additional costs to prevent		-3,500,000
Total possible savings		$5,862,000

A benefit/cost ratio 5.9 ÷ 3.5 ≈ 1.7:1 was obtained through the stepped-up manning program. Using 1972 National fire planning data, an additional estimated savings of $108 million was realized as a result of decreased burned area.

RESULT - *Substantial savings in losses as a result of well prepared strong aggressive initial attack.*

Example 4

For the January 1 - July 31, 1970 period, the Tonto National Forest had only one fire that exceeded a Class C. The fire was a Class D of 130 acres. The total Tonto burned acreage for this 1971 period was 664 acres.

For the January 1 - July 31, 1970 period, the Tonto National Forest had 9 fires over Class C and a total burned acreage of 16,183 acres. The five year burned acreage average for January 1 - July 31 on the Tonto National Forest is 5,900 acres.

The 1971 manning program was instrumental in reducing the burned acreage. Time and time again, the stepped-up manning program stopped potential large fires.

Dump Fire - 5/21/71 - 3 acres. Fire danger was extreme with 25-35 mph erratic winds. The fire was stopped with a large, stepped-up manning, ground tanker. Estimated size without the equipment - 200 acres.

Car Fire - 6/20/71 - 2 acres. Fire danger was extreme. Fire occurred on a steep chaparral slope. The fire was stopped with three air tankers, one large pumper and a large ground crew. Estimated size without these resources - in excess of 3,000 acres.

The list of successful stories such as these is long. If the Tonto National Forest had burned their five year average, suppression costs would have been in excess of one-half million dollars. Stepped-up manning costs of less than $200,000 held acreage loss to only 664 acres.

RESULT - *Strong initial attack paid it's way.*

THE FUTURE

Although we in the Southwestern Region know that much was accomplished this past season, we also recognize that much remains to be done.

We have told you some of what we felt were strides forward in the areas of prevention and initial attack. The future calls for a continued strengthening of these programs.

Renewed emphasis must also be given to other related fire management programs:

SAFETY - *During the past two fire seasons, Regional Fire Safety Coordinators were assigned to major conflagrations, and Safety Officer Training Sessions were held. The results were gratifying - major improvements in both personnel and vehicle accident occurrence.*

The Region's intensified aerial operation requires special safety emphasis.

Several aircraft accidents plagued the Region this year in spite of the fact that we initiated new policies and actions to prevent them.

FUELS MANAGEMENT - *We know that we must accelerate our preattack planning, fuelbreak and prescribed burning programs as rapidly as financing permits.*

TRAINING - *Intensive specialized fire training must be given to key selected individuals and then we must use these personnel in the positions for which they were trained.*

ORGANIZATION - *Permanent full time positions must be established for various key fire controls positions such as: fire prevention technician, helitack foreman, dispatcher, etc. Specialized equipment such as large ground tankers must be provided.*

The key to meeting the needs of the future is to provide a financial base so a stable organization and program can be planned and implemented. Region 3's Interim Fire Plan was a big step towards this goal. The 1972 National Plan will complete this job and provide a program for successful manning. The financing of a manning, a fuel treatment, and a training program will provide Region 3 with a presuppression organization capable of safe, strong initial attack. In 1971, losses (costs plus damages) were greatly reduced. This can and will be repeated in future years.

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EXPERIMENT STATION

THANKS!!!

Appreciation is extended to all "out-of-Region" and "out-of-Service" personnel who gave Region 3 assistance in their successful 1971 season.

...to other Federal and State agencies, private individuals, groups, newspapers, magazines, radio, television, and the many well wishers.